ASSISTANT SECRETARY OF DEFENSE
WASHINGTON, D.C. 20301

May 21, 1964

Honorable Joseph Campbell
Comptroller General of the United States
General Accounting Office

Dear Mr. Campbell:

During recent months the GAO has issued a number of draft and final reports, indicating that if contractors of the Department of Defense continue to lease electronic data processing equipment, greater cost will be incurred by the Government than if the DoD purchases and furnishes such equipment to them. These reports and the contractors referred to are listed on Enclosure B. (OSD Case #1799).

By letters of December 9, 1963 and February 25, 1964, from the Deputy Assistant Secretary of Defense (Procurement), in response to your letter of September 19, 1963, concerning the Martin Marietta, Orlando, Florida report (OSD Case #1739), we expressed reservations on certain assumptions, conclusions, and recommendations which had been restated by GAO in a number of different reports on this subject. Also, we advised that further review and examination of the matter would be necessary before definitive comments could be furnished to you.

This letter is to provide the results of our reappraisal to date. These comments, however, are equally applicable to all the reports listed on Enclosure B and, therefore, it is requested that this letter with enclosures be included as an appendix in each of those reports yet to be issued in final form.

The GAO position, in brief, is that computers have a useful life of 5 to 10 years; that computers should be retained in use for that period either by the original user or by a secondary user somewhere in the Federal Government or in the contractor area; that, although the cost of leasing will exceed the cost of ownership by the end of 5 years, neither the Government nor the contractor will have title to the equipment and, therefore, that the Government should buy computers and furnish them to contractors. Although the GAO has formulated this position in connection with several defense installations and contractors, by its very pattern it would have to apply to all users of computers. If pursued to its inevitable conclusion, it

would proceed to a total ownership posture for the Federal Government in its acquisition of electronic computers. The pattern of analysis, findings, and conclusions leaves no room for exceptions.

There are several fundamental issues at stake in the proposition for ownership advanced by the General Accounting Office, one of which is the present policy of the Government that contractors will be required to furnish their own facilities. We believe that this policy should remain unchanged, avoiding long-term investment and commitment to particular equipment on an assumption that other uses will be found for it when its original use is expired. The cost to the Government of acquiring, managing, maintaining and disposing of an inventory of equipment demands that decisions to purchase be based soundly on specific requirements of reasonable reliability. Failure to purchase EDPE on that basis could result in a multi-million dollar inventory of idle computer equipment.

In developing its arguments in support of purchase, the GAO points out that (1) lease costs exceed the cost of purchase; (2) the Government will have reimbursed the contractor for all or a substantial part of the costs; and (3) that neither the Government nor the contractor would have title to the equipment. The alternative implied, but not expressed, is that payment of lease costs equivalent to purchase should result in title passing to the lessee, and since the Government reimburses the lease costs in the case of cost reimbursement-type contracts, title should pass to the Government. Two conclusions are immediately evident from this rationale: (1) eliminate leasing as an accepted business practice or (2) reduce the leasing practice to one of time-payment purchasing.

Another fundamental issue is the considerable effort this Department has made to divest itself of ownership of obsolete facilities. Purchase of computers on the scale apparently advocated by GAO would certainly reverse this effort and eventually could negate much of the success already achieved.

Examination of the reasons why computers are replaced and why new computers are being developed identifies yet another fundamental issue--progress. User competency is developing at a rapid pace and advancements in design are producing computers which are lower cost, more compact and more general purpose. Continued progress in this field is essential to weapons systems development, to scientific endeavor, to business management, to education and to many other fields of endeavor. While we do not profess that ownership in itself will prevent progress, certainly purchase on the basis and magnitude proposed by the General Accounting Office, and the disregard for replacement requirements demonstrated in its reports on this subject, would introduce a degree of inflexibility that may retard progress.

The General Accounting Office has stated that its findings have demonstrated the need for a central management office in the Federal Government to own and manage data processing equipment used by Government agencies and contractors, and that the actions being taken by the Department of Defense and military services will further illustrate this need. It is not clear to this Department how the existence of such an office would eliminate the problems of lease/purchase determinations or resolve the fundamental issues discussed above. In any event, it is assumed that guidance on a central management office concept will ensue from the study ordered by the President and being carried out by the Bureau of the Budget.

The General Accounting Office reports on this subject nevertheless have served to warn of the potential costliness inherent in continued predominance of leasing as a general practice. In consequence of this, and as will be noted from the detailed comments enclosed, we are taking several actions. One of these actions is to incorporate in ASPR the same principles for lease versus purchase determinations for EDPE by contractors as are applied to Defense installations by DoD Directive 4105.55, "Selection and Acquisition of Automatic Data Processing Equipment (ADPE)."

We are continuing our review along the lines indicated in the enclosed comments. This review will include all of the contractors covered in GAO reports to date as well as other contractors; therefore, we would propose no further replies to individual draft reports on this subject until our efforts have had an opportunity to take effect.

Sincerely,

/s/ Thomas D. Morris

THOMAS D. MORRIS
Assistant Secretary of Defense
Installations and Logistics

Enclosures
A - Comments
B - List of Applicable Reports

The conclusion that excess costs will be incurred is based on comparison of the costs of purchase and maintenance, including the cost of investment calculated at the Treasury Department borrowing rate. It assumes a "useful life" of 5 to 10 years and calculates the amount of excess costs on the basis of a 10-year life.

The General Accounting Office states that these reports are made within the concept of central ownership and management of data processing equipment by the Government as a whole rather than from the standpoint of individual contractors or using agencies. This concept, applied in conjunction with a "5 to 10 year useful life," would establish at the outset that data processing equipment would always be purchased, and that the Government would always buy and supply data processing equipment to contractors as GFE.

The Department of Defense intends to avoid furnishing data processing equipment to contractors as GFE unless it is Government-owned and in an excess status. The basic trend in defense procurement policy today is to place maximum responsibility on the contractor for performing the contract, including the responsibility for selecting and acquiring all necessary equipment instead of having it furnished by the Government. This policy goes hand in hand with the increased emphasis on the use of fixed price contracts and contracts with wide-ranging incentives which are designed to assure utmost interest by defense contractors in sound contract management. We believe that the most effective way of assuring management decisions that are in the best interests of the Government is not through increased Government control and intervention but through the use of contracting techniques that provide maximum incentive for efficient and economical contract performance. For this concept to be effective there must be adequate scope for independent decision-making by defense contractors and decreased direction of such decisions by the Government.

We consider such independent management decisions to be particularly necessary in connection with matters as important as the selection, utilization and replacement of computers. Sound decisions in this area may be integral to a company's competitive position, to the efficiency and economy of its operations, and to its capability to meet increasingly sophisticated requirements of defense contracts. We believe it essential in a system of free enterprise that such decisions be made by contractors and not be imposed by the Government.

The General Accounting Office has presented the same advocacy for purchase of electronic computers in defense installations based on

the same premises and analyses. This philosophy was again evident in the recent GAO Report B-146796 which analyzed the Department of Defense plans for purchase of leased automatic data processing components in use at military installations. As we pointed out in our comments on that report--and they apply equally to the lease/purchase problem in contractor facilities--the heart of the problem rests in GAO's assumption that the Department of Defense can invest substantial sums of money in capital equipment of this nature on little more than the possibility that it will have an economic useful life of "5 to 10 years" somewhere in the Federal Government. This would, in effect, establish a policy that the Department would only purchase and never lease computers. In addition to the serious budgetary problems which would be created, we believe such a policy to be unwise.

We cannot subscribe to a principle of purchase and forced retention in use of an electronic computer solely to amortize capital investment, when the function for which it was originally acquired can now be performed more efficiently and economically on a computer of more advanced design, or the function itself has grown to the point where it exceeds the capability of the computer. The alternative offered by the GAO is to transfer the computer to a secondary user which the GAO assumes can profitably employ it. Sound management would dictate that secondary uses be identified before the investment is made. The probabilities of identifying secondary uses of computers two or more years in advance of their occurrence are remote today in the field of automated information systems when the user learning process is advancing at the same rate as technological developments, and the future requirements for information are not always predictable. Based on our analysis of computer utilization in contractor facilities, we find no assurance that the economies envisaged by your report would result from mass outlays of defense appropriations for the acquisition of computers for uses that have not been predetermined and clearly established in advance.

It is accepted that the cost of leasing will eventually overtake and exceed the cost of purchase and maintenance if leased equipment is retained in use for a sufficient length of time. This is true in the case of computers as it is in the case of all capital equipment. The General Accounting Office maintains that the "useful life" of all second-generation computers as a group is "5 to 10 years" because of their solid-state circuitry, without regard to differences in specific computer systems. Mortality rates for electronic computers, in fact, have not been established. The computer industry is still young and its rate of growth so fast that historical basis for determining equipment mortality has not been developed and documented.

Useful life, or mortality rates, of computers must reflect application life (utility in a given function), technological life and physical life, each of which will vary with each computer system. These three

factors, in combination, have created a general range of useful life from three to thirteen years, depending upon the specific computer system involved--indicative of the fallacy of establishing a "useful life" for computers collectively at this point in time.

Department of Defense experience indicates that application life is perhaps the most influential factor, It was the application life more than any other factor, which influenced our decisions as to which equipment to include in the recent program for purchase of computers in Defense installations. The sheer growth of requirements for information has forced important systems developments and major changes in information processing which, in turn, have played a prominent role in the technological changes in computer design.

Technological life, or conversely, technological obsolescence is both the cause and the reflection of technological progress. Two characteristics of this progress, in particular, are significant. One is a rather typical replacement cycle of two to three years to meet capacity or specific program requirements. The other is the development of families of computers which has served to extend the technological life of a given series of equipment but shorten the utility of equipment components in given applications.

The physical life of computers varies with the components. The nature and design of central processor circuitry and storage is such that it improves with use and age. The physical life of even some "first generation" processors has not expired. Physical life of the normal peripheral devices is considerably less, and depends on the degree of wear on moving parts and the quality of maintenance.

We believe that the General Office in its findings has not given adequate recognition to equipment and replacement dates established by the contractor, to the cost of field modifications to owned equipment, nor to the true costs of ownership, including taxes and insurance. These are key factors of a lease/purchase decision on contractor data processing equipment. For example, the importance of these factors is illustrated in the following table provided from our analysis of the Martin Marietta Aerospace Division report of March 18, 1964, B-146812. The DoD projection includes purchase prices, cost of field modification and replacement components, taxes, insurance and maintenance costs. The GAO projection includes purchase price and maintenance costs.

	DoD Projection to Replacement Date	GAO Projection to 5-Year Life
Purchase, Maintenance and Modifications	$37,187,488	$23,584,708
Taxes and Insurance	1,179,750	
Total Ownership Costs	$38,367,238	$23,584,708
Total Lease Costs	$30,106,006	$31,331,227

As a result of its review thus far of contractor use of data processing equipment, the Department of Defense has concluded that equipment replacement requirements, ownership costs, the cost of capital and priority of allocation of available capital are the key factors in lease/purchase decisions. We are studying what changes can be made to ASPR to influence more contractor purchase of such equipment. The treatment of interest costs and sharing of risks and gains on capital investment are examples of the approaches being thoroughly explored. Another is the inclusion in ASPR of lease/purchase criteria similar to that now contained in DoD Directive 4105.55, "Selection and Acquisition of ADPE." Additional lines of investigation have also been opened to determine the effect of present values for money and return on investment, to establish mortality rates, and to review corporate policies and systems for computer acquisition and replacement across the entire Defense cost-plus contractor base. With regard to the latter, it is not our intent to make management decisions for Defense contractors, but rather to require that they have a sound policy for equipment replacement.

The General Accounting Office has recommended that the Secretary of Defense give immediate consideration either (1) to purchasing the equipment installed in contractors' plants,or (2) to limiting the amounts the contractor is permitted to charge the Government to an appropriate allocation of the cost of ownership, based on a realistic estimate of the total useful life of the equipment, not limited to its use in present applications, and (3) to amending DoD Directive 4105.55 to include a requirement that consideration be given to purchasing equipment installed at contractor plants where a substantial part of the cost of such equipment will become part of Government contract prices.

With regard to recommendation (1), it is expected that some selective purchases by the contractor will result from our continuing review, and a greater degree in the future from changes to ASPR now contemplated. For the reasons stated earlier, the Department of Defense does not propose to buy the equipment and furnish it to the contractor as GFE.

With regard to recommendation (2), costs of leasing chargeable to contracts will be limited to costs of ownership, applying current provisions of ASPR and additional guidelines as noted below. Allowability of costs must be guided by determinations of the reasonableness of the contractor's lease/purchase decision in the light of the facts existing at the time the decision was made, including the basis of the contractor's own anticipated utilization of equipment, rather than the equipment's total useful life and potential usefulness to users other than the contractor.

With regard to recommendation (3), we are changing ASPR to incorporate the same principles for lease/purchase determinations by contractors in their computer acquisitions as are applied to Defense installations by DoD Directive 4105.55.

Although we disagree with the General Accounting Office conclusions as to excess costs and with the recommendations for purchase by the Government based on indeterminate future uses, we believe that the General Accounting Office has raised a valid question on the advisability of continuing at its present level the predominant practice of Government contractors to lease rather than buy electronic computers. It is a question which must be considered as one part of the total problem of contractor facilities acquisition, and which must be viewed in the light of such basic issues as the respective roles of private and public investment in defense industry and the extent to which the use of private capital in defense industry should be encouraged and rewarded. The Department of Defense does not consider the solution to rest in a decision to always buy computers and never lease, but rather in decision to buy selectively in those instances where the systems stability of both equipment application is evident. It is believed that the course of action being undertaken by the Department of Defense, as described herein, will provide the contractual environment and surveillance necessary to assure that appropriate criteria and standards are applied by contractor management in connection with lease/purchase decisions.

Comments Set Forth in the Basic Letter Apply to Following GAO Reports Concerning Lease vs. Purchase of EDPE in Contractor Facilities

OSD Case No.	Date of GAO Rpt	Status of Report	Name and Location of Contractor
1739	Sept. 19, 1963	Final	Martin Marietta Corp. Aerospace Division Orlando, Florida
1799	Mar. 18, 1964	Final	Martin Marietta Corp. Aerospace Division Baltimore, Denver & Orlando
1823	Apr. 23, 1964	Final	Boeing Co., Airplane Division, Wichita, Kansas
1847	Apr. 29, 1964	Final	Continental Aviation & Engineering Corp., Res. Div., Detroit, Michigan
1850	Oct. 15, 1963	Draft	General Dynamics Corp. Fort Worth, Texas
1853	Apr. 28, 1964	Final	Chrysler Corp., Defense Operations Division, Centerline, Michigan
1857	Oct. 23, 1963	Draft	Aerojet General Corp. Sacramento, Calif.
1859	Oct. 24, 1963	Draft	North American Aviation Inc., Autonetics Division, Anaheim, California
1872	Nov. 1, 1963	Draft	Goodyear Aerospace Corp., Akron, Ohio
1874	Nov. 7, 1963	Draft	ARO, Inc., Arnold Air Force Station, Tenn.
1893	Dec. 6, 1963	Draft	Aerojet-General Corp. Sacramento, Calif.

Enclosure B

OSD Case No.	Date of GAO Rpt	Status of Report	Name and Location of Contractor
1899	Dec. 19, 1963	Draft	General Electric Co. Flight Propulsion Div., Cincinatti, Ohio and West Lynn, Mass.
1906	Jan. 3, 1964	Draft	General Motors Corp. AC Spark Plug Div. Milwaukee, Wisconsin
1907	Jan. 3, 1964	Draft	General Electric Co. Heavy Military Electronics Department, Syracuse, New York
1912	Jan. 15, 1964	Draft	Boeing Co., Aerospace Div., Seattle, Wash., and various other locations
1921	Jan. 22, 1964	Draft	General Electric Co. Light Military Electronics Department, Utice, New York
1925	Jan. 23, 1964	Draft	Lincoln Laboratory, M I T, Lexington, Massachusetts
1931	Feb. 3, 1964	Draft	Lear Siegler, Inc. Instrument Division, Grand Rapids, Mich.
1939	Feb. 17, 1964	Draft	General Dynamics Corp. Astronautics Division San Diego, Calif.
1954	Mar. 5, 1964	Draft	Hercules Powder Co. Bacchus Works, Magna, Utah
1958	Mar. 12, 1964	Draft	Westinghouse Electric Corp., Defense & Space Center, Baltimore, Maryland
1960	Mar. 13, 1964	Draft	RCA, Defense Electronics Products, Camden, N. J.
1990	Apr. 17, 1964	Draft	General Electric, M&S Div., Valley Forge, Pa.